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# Relatively speaking (in Circassian)\*

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## 1. Taking things for granted?

It is a standard assumption that subordinate clauses like relative, embedded declarative, and interrogative clauses in natural language vary according to their morphosyntactic and semantic characteristics. Their morphosyntactic variation is expressed in the presence/absence of a *wh*-word, a relative pronoun, or an overt complementizer; syntactic transparency (embedded declaratives) or opacity (embedded interrogatives and relative clauses); differences in the nature of the complementizer (Rizzi 1990: 45) and differences in the relationship between the embedded clause and the matrix clause (complementation vs. adjunction). These embedded clauses are also assigned very different interpretations. A headed relative like *which Adam likes* is standardly assumed to denote the set of inanimate individuals that Adam likes (Quine 1960; Montague 1973); a free/headless relative like *what Adam likes* denotes the (plural) inanimate individual that Adam likes (Jacobson 1995, Caponigro 2004); an embedded declarative like *that Adam likes vegetables* denotes the proposition 'that Adam likes vegetables'; an embedded polar interrogative like *whether Adam likes vegetables* denotes a set containing the proposition 'that Adam likes vegetables' and/or its negation 'that Adam does not like vegetables'; finally, an embedded constituent interrogative like *which food Adam likes* denotes the set of propositions that are appropriate (true) answers to the question 'which food does Adam like?' (see Hamblin 1973 and Karttunen 1977 for the semantics of both types of interrogatives).

We present and analyze new empirical evidence suggesting that such morphosyntax/semantics mapping may not be universal. The evidence comes from Adyghe, a Northwest Caucasian language, in which what looks and behaves like the very same morphosyntactic construction (henceforth "mystery clause", MC) is used to convey the five different meanings above. This raises at least two main questions: (i) Is the MC truly one and the same construction and what construction is it? This is the issue this paper focuses on. (ii) How is the same construction mapped into very different meanings? For reasons of space, we cannot address this issue here but the interested reader is referred to Caponigro and Polinsky (to appear).

The paper is structured as follows. Section 2 gives a brief background on Adyghe. Section 3 introduces the main morphological and syntactic properties of the MC. Section 4 develops our proposal concerning the syntax of the MC. Section 5 concludes.

## 2. A brief introduction to Adyghe

Adyghe (ady; also known as West Circassian), spoken by about 150,000 people in the south of Russia, is a morphologically rich language with an absolutive/ergative case system (syncretic for first and second person). Nouns are inflected for what we will refer to as "specificity" (currently, it is unclear to us what the precise semantic import of case marking is). Specific DPs have overt marking both in the ergative (ERG) and absolutive (ABS), as shown in (1); non-specific forms of both cases have zero marking, as shown in (2).<sup>1</sup> Other cases include the generalized oblique (*-m*) and instrumental *-č'e*, always overtly marked.

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<sup>1</sup> 3rd person absolutive has a null agreement marker, and we will not show it beyond (1) through (3).

- (1) č'ale-m mə mašine-r Ø-ə-q<sub>w</sub>əta-ɤ  
boy-ERG this car-ABS 3SG.ABS-3SG.ERG-break-PAST.DECL  
'The boy broke this car.'
- (2) č'ale-xe-Ø mašine-Ø Ø-a-q<sub>w</sub>əta  
boy-PL-ERG car-ABS 3PL.ABS-3PL.ERG-break.PRES.DECL  
'Boys break cars.'

Verbal morphology is particularly complex. A verb can agree in person/number with subject, object, and indirect object (cf. Colarusso 1992: 74, 132-135; O'Herin 2002: 49-69 for agreement in the closely related Kabardian and Abaza) and has separate positional slots for negation, tense, aspect, causation, mood, and illocutionary force (Smeets 1984: ch. 5, 6; Rogava and Keraševa 1966: 95-331). In addition, Adyghe has a rich system of applicative heads (traditionally referred to as preverbs, see Smeets 1984: 256-67) that incorporate into the verbal complex (see O'Herin 2001 for similar forms in Abaza). These applicatives take an oblique complement and show agreement with it. The scarcity of postpositions may be a trade-off of the articulated applicative system; most of the phrases corresponding to PPs in other languages have to be expressed by a dedicated applicative marker in the verb and its complement in the oblique case. Applicatives are prefixal and their order mirrors the syntactic hierarchy: the leftmost applicative is always the highest, as shown in (3).

- (3) Ø-t-de-p-fə-a-š̥xɛ-κ  
 3SG.ABS-1PL-COM-2SG-BEN-3PL.ERG-eat-PAST  
 [<sub>AppIP-1</sub> 1PL-COM-<sub>[AppIP-2</sub> 2SG-BEN-<sub>[<sub>v</sub>3PL.ERG-<sub>[<sub>v</sub> eat]]]]]-PAST  
 'They ate this with us for you.'</sub></sub>

Word order in root clauses is extremely free (for instance, in matrix declarative clauses such as (1), all six word orders are possible), however embedded clauses must be verb-final. The language has extensive subject and object *pro*-drop. Matrix polar interrogatives are formed by adding the interrogative particle (Q) to the predicate, as shown in (4).

- (4)      č'ale-m    mə    mašine-r    ə-qwəta-ɤ-a  
 boy-ERG this car-ABS 3SG.ERG-break-PAST-Q  
 'Did the boy break this car?'

Matrix constituent interrogatives are clefts. Compare the biclausal structure in (5): the *wh*-word is in the predicate position, with the *Q* marker attached, and either preceeding or following the remainder of the sentence is a headless relative clause, as shown in (5a) and (5b) respectively.

- [illegible]

Externally headed relative clauses are prenominal (on internally headed relatives, see Lander 2004), and the relativized argument is cross-referenced by special agreement on the verb in the relative clause which we will refer to as “wh-agreement” (see O’Herin 2002: ch. 8 for a similar phenomenon and its analysis in Abaza; see Hewitt 1979 for a similar pattern in Abkhaz).

Wh-agreement is part of the regular verbal agreement paradigm: wh-agreement prefix appears in the same positional slot as the person agreement marker for the relevant argument (ergative subject, absolutive subject/object, oblique object, complement of an applicative). However, unlike regular person agreement, there can be only one wh-agreement marker on a given verb. Unlike person agreement, wh-agreement indicates the presence of a silent constituent (gap) in a certain syntactic relation to the verb bound (i.e. coindexed with and c-commanded) by an operator inside the clause. The gap in the absolutive position is indexed by a null marker, as in (5). The gap in the ergative or absolutive position, instead, is indexed by the marker *z(j)ə-* or *ze-*, which we hypothesize can be

decomposed into the actual wh- marker (z-) and person marker, as shown in (6) and (7).<sup>2</sup>

- (6) [DP<sub>CP</sub> *ec<sub>i</sub>* *mə* *mašine-r* *z-ə<sub>i</sub>-q<sub>w</sub>əta-ɤ*] *č'ale-r*  
           this car-ABS WH-ERG-break-PAST boy-ABS  
           'the boy who broke this car'
- (7) [DP<sub>CP</sub> *č'ale-m* *ec<sub>i</sub>* *mə* *mašine-r* *z-e<sub>i</sub>-re-jə-q<sub>w</sub>əta-ɤ*]  
           boy-ERG this car-ABS WH-OBL-INSTR-3SG.ERG-break-PAST  
           šh<sub>w</sub>enč'ə-r]  
           gun-ABS  
           'the gun that boy broke this car with'

Wh-agreement is marked not only on the verb, which has a null argument, but can also be marked on the coreferent constituents in the c-command domain of that element. Compare (6) above and (8), (9); in (8), the boy is the owner of the car, and in (9) the owner is distinct from the hooligan:

- (8) [DP<sub>CP</sub> *ec<sub>i</sub>* *zə<sub>i</sub>-mašine* *z-ə<sub>i</sub>-q<sub>w</sub>əta-ɤ*] *č'ale-r*  
           WH-car.ABS WH-ERG-break-PAST boy-ABS  
           'the boy who<sub>i</sub> broke his<sub>i</sub> car'
- (9) [DP<sub>CP</sub> *ec<sub>i</sub>* *ə<sub>k</sub>-mašine* *z-ə<sub>i</sub>-q<sub>w</sub>əta-ɤ*] *č'ale-r*  
           3SG.POSS-car.ABS WH-ERG-break-PAST boy-ABS  
           'the boy who<sub>i</sub> broke his<sub>k</sub> car'

To summarize, Adyghe verbal morphology indexes the main verbal arguments; applicative heads incorporate into the verb and show agreement with their complements (always non-absolutive); and finally, the language has special wh-agreement which indexes a gap bound by an operator. Let's now turn to the ways this complex morphological machinery is used.

### 3. Mystery clauses

*3.1. MCs as relative clauses.* The first subset of mystery clauses is quite prosaic: headed and headless relative clauses. We just introduced relative clauses in our discussion of wh-agreement. We will now briefly discuss their analysis. Adyghe relative clauses do not show reconstruction effects and do not preserve idiomatic meaning under relativization:

- (10) a. *ə-pe* *h<sub>w</sub>əzə-r* *qərexə*  
           3SG.POSS-nose smoke-ABS blow.PRES  
           'S/He is furious.' (lit. "Smoke is coming out of his/her nose.")
- b. [*ə-pe ec* *qərexə*] *h<sub>w</sub>əzə-r*  
           3SG.POSS-nose blow.PRES smoke-ABS  
           'the smoke that is coming out of his/her nose' (literal meaning)  
           # 'his/her anger' (idiomatic)

These data argue against the head-raising analysis (Kayne 1994, Bianchi 2002, a.o.) and point to the operator-variable analysis of relative clauses. On the operator analysis, there are two further possibilities: the operator moves to the periphery of the relative clause (11a); or it is base-generated there and binds an empty category in the clause (11b).

- (11) a. [<sub>CP</sub> *Op<sub>i</sub>* [<sub>TP</sub> *Op<sub>i</sub>* ... ]]           MOVEMENT ANALYSIS  
       b. [<sub>CP</sub> *Op<sub>i</sub>* [<sub>TP</sub> *pro<sub>i</sub>* ... ]]       BINDING ANALYSIS

At this juncture, we do not have sufficient evidence to distinguish between these two possibilities; while the movement analysis is more traditional, we should not lose sight of the fact that Adyghe has

<sup>2</sup> Adyghe also has homophonous prefix *ze-*, reflexive/reciprocal; this prefix can co-occur with the *ze-* discussed here (Smeets 1984: 256).

very rich pro-drop and that unselective binding of a null pronominal indexed on the verb by agreement cannot be ruled out. Both analyses predict island effects, and as (12) shows, this prediction is borne out: while scrambling in the root clause is free (12b), scrambling out of the relative clause is ungrammatical (12c):

- (12) a. [č'ale-m tək<sub>w</sub>ase ec<sub>i</sub> qəsfjəʔ<sub>w</sub>etəkə] qebar-er<sub>i</sub> njəpe zexesxkəre  
 boy-ERG yesterday spread.PAST rumor-ABS today reaches.me  
 'The rumor that the boy spread yesterday has reached me today.'  
 b. njəpe zexesxkəre [č'alem tək<sub>w</sub>ase ec qəsfjəʔ<sub>w</sub>etəkə] qebarer  
 today reaches.me boy yesterday spread rumor  
 'The rumor that the boy spread yesterday has reached me today.'  
 c.\* č'alem<sub>k</sub> njəpe zexesxkəre [ t<sub>k</sub> tək<sub>w</sub>ase ec qəsfjəʔ<sub>w</sub>etəkə] qebarer  
 boy-ERG today reaches.me yesterday spread rumor

Free relatives are very similar to headed relatives, they just do not have an overt head and the case marker attaches directly to the right edge of the relative clause. They appear in *wh*-questions, which are clefts (see ex. (5) above). Just as headed relatives, free relatives are syntactic islands (13).

- (13) mjərə [DP[CP mə mašine-r z-ə-q<sub>w</sub>əta-kə]-r] jəwax  
 Mira this car-ABS WH-ERG-break-PAST-ABS beat  
 'Mira beat the one/those who broke this car.'

In sum, Adyghe allows free relatives and pronominal headed relatives, which are fully finite (cf. the tense marking in all the relatives above), a rather unsurprising situation paralleled by many head-final languages.

3.2. *MCs as "embedded matrix declarative clauses."* The mystery starts to develop when we look at MCs in other positions. Adyghe has a series of non-finite embeddings with the adverbial ending *-ew* (Smeets 1984; Lander 2004; Polinsky and Potsdam 2006) and direct quotations, but embedding of finite clauses like declaratives is impossible. In fact, descriptions of Northwest Caucasian emphasize that these languages lack embedding complementizers (Jakovlev and Ašhamaf 1940, Rogava and Keraševa 1966, Gerasimov and Lander 2008) and what appears as an embedded finite clausal complement in other languages is introduced either as direct speech or as a specially marked verb form. For instance, the matrix verb 'tell' can take a DP object (14a), but not an embedded clause, as shown in (14b) where we try to embed our initial matrix declarative in (1):

- (14) a. qebar-er Ø-qə-s-jəʔ<sub>w</sub>a-k  
 news/rumor-ABS 3SG.ASB-DIR-1SG.IO-3SG.ERG-tell-PAST  
 'S/he told me the news/rumor.'  
 b.\* [č'ale-m mə mašine-r ə-q<sub>w</sub>əta-kə] qə-s-jəʔ<sub>w</sub>a-k  
 boy-ERG this car-ABS 3SG.ERG-break-PAST DIR-1SG.IO-3SG.ERG-told  
 ('S/he told me that the boy broke that car.')

In order to embed the proposition expressed by a declarative sentence like (1), the embedded predicate has to carry the following two extra markers, as shown in (15): (i) the additional prefix *zere-*, which Smeets characterizes as 'that/how' (1984: 254), and (ii) the case suffix assigned by the embedding predicate (absolutive in (15), just as the DP complement in (14a)).

- (15) [DP[č'ale-m mə mašine-r \*(zere)-q<sub>w</sub>əta-kə]-\*(r)] qəsjəʔ<sub>w</sub>a-k  
 boy-ERG this car-ABS zere-break-PAST-ABS told.me  
 'S/he told me that the boy had broken this car.'

Thus, a special MC, which occurs in a DP position and looks identical to a headless relative (cf. (15) with (13) above), is needed to express an embedded proposition. Further evidence that this MC occurs in the DP position, not CP position, comes from its co-occurrence with postposition (16a) or as possessor DP (16b):

- (16) a. [PP [əq<sub>w</sub>e qe-zere-k<sub>w</sub>ež'e-ke-]m paje] jane mæg<sub>w</sub>əš<sub>w</sub>e  
son.ABS DIR-zere-come\_back-PAST-OBL for mother glad.PRES  
'The mother is glad that her son is back (lit.: glad for).' (Sumbatova 2005)  
b. [DP [DP [CP č'aler qə-zere-k<sub>w</sub>ež'e-š't-ə]m] jə-šepqə] -r]  
boy.ABS DIR-zere-come\_back-FUT-OBL POSS-verity-ABS  
'the validity/news/fact of the boy arriving'

Even more surprisingly, the very same form is observed in embedded polar interrogatives, as discussed in the next section.

3.3. *MCs as “embedded polar interrogatives.”* Like declaratives, polar interrogatives cannot be embedded directly, with or without the interrogative:

- (17) \* [č'ale-m mə mašine-r əq<sub>w</sub>əta(-a)] qəke<sub>w</sub>pčax  
boy-ERG this car-ABS broke-Q asked  
('S/he asked if the boy had broken this car.')

Instead, they can either be introduced as direct quotations or appear in the nominal form. In what follows, the verb 'ask/inquire' takes an oblique object (18a), and a complex noun phrase with the same mystery verb form as above can appear in that position (18b):

- (18) a. [DP sə-çe-m] qəke<sub>w</sub>pčax  
1SG.POSS-name-OBL asked  
'S/he asked my name.'  
b. [DP [č'ale-m mə mašine-r \*(zere)-q<sub>w</sub>əta-ke]-\*(m)] qəke<sub>w</sub>pčax  
boy-ERG this car-ABS zere-break-PAST-OBL asked  
'S/he asked if the boy had broken this car.'

The form of the embedding in (18b) is exactly the same as that in (15) above, the only difference has to do with the case assigned by the matrix verb (ABS -*r* by 'tell', OBL -*m* by 'ask').

3.4. *MCs as “embedded constituent interrogatives.”* We have already seen that polar interrogatives cannot embed directly, so it comes as no surprise that constituent interrogatives do not embed either, regardless of the order or presence of the interrogative marker:

- (19) \* [[DP [mə mašine-r z-ə-q<sub>w</sub>əta-ke] χet(-a)] qəke<sub>w</sub>pčax  
this car-ABS WH-ERG-break-PAST who-Q asked  
('S/he asked who broke this car.')

The meaning of an embedded constituent interrogative can be conveyed as follows:

- (20) mjəra [DP [mə mašine-r z-ə-q<sub>w</sub>əta-ke]-m] qəke<sub>w</sub>pčax  
Mira this car-ABS WH-ERG-break-PAST-OBL asked  
'Mira asked who broke this car.'

This MC is identical to headless relatives we have already seen in (13) above: it has the overt wh-marking indicating that the gap is in the ergative position, and it is in the oblique case, as determined by the matrix verb. If Mira's question is about the broken car, the MC looks as follows:

- (21) mjəra [DP [č'ale-m Ø-ə-q<sub>w</sub>əta-ke]-m] qəke<sub>w</sub>pčax  
Mira boy-ERG WH.ABS-3SG.ERG-break-PAST-OBL asked  
'Mira asked what the boy broke.'

Questioning about other constituents is also expressed by MCs that look like headless relatives:

- (22) mjərə [[č'alem mə mašiner zə-d-jə-qwəta-ke]-m] qəke<sub>w</sub>pčəə  
 Mira boy.ERG this car.ABS WH-COM-3SG.ERG-break-PST-OBL asked  
 'Mira asked with whom the boy broke this car.'

Unlike matrix interrogatives, no overt *wh*-word can occur in embedded interrogatives. Both in root and embedded structures, multiple *wh*-questions are impossible, and have to be expressed by coordination of single *wh*-questions:

- (23) mjərə [[z-ə-qwəta-ke]-m]-jə [[Ø-ə-qwəta-ke]-m]-jə qəke<sub>w</sub>pčəə  
 Mira WH-ERG-break-PST-OBL-and WH.ABS-3SG.ERG-break-PAST-OBL-and asked  
 'Mira asked who broke and what.' (no pair list reading)

The surface form of embedded interrogatives offers the initial key to our mystery clauses. Embedded *wh*-questions seem to be expressed by headless relative clauses, essentially identical to the relative clause used in the root cleft question (see (5) above), and the case of the headless relative clause is determined by the matrix verb. This leads us to the proposal concerning the structure of Adyghe MCs.

#### 4. The syntax of Adyghe mystery clauses

4.1. *All MCs are relative clauses.* Our proposal is that all the MCs in Adyghe are complex DPs containing a relative clause with or without a nominal head (N) as the complement of the determiner head (D):

- (24) [DP [NP [CP Relative Clause](N)] D]

The evidence in support of the DP nature of MCs is threefold. First, the *-r/-m* marker, which occurs as a suffix on standard DPs, has to appear at the right edge of the MC as well (unless there is an overt head noun). Second, MCs functioning as embedded declaratives or interrogatives have the same distribution as DPs, namely, they can occur as complements of postpositions (17), which would be unexpected for CP complements. Finally, these complements conjoin the same way as DPs, with the particle *-(r)jə* (23). Unlike DPs, CPs do not coordinate—for instance, two relative clauses can neither stack nor conjoin.<sup>3</sup>

As far as the nominal head goes, we are assuming it is optional since, although often missing, sometimes it occurs: for instance, the sentence in (21) above can be also paraphrased as having an overt head noun 'thing,' and (22) can have an overt head noun 'person,' as shown in (25).

- (25) mjərə [[č'alem mə mašiner zədjəqwətake] cəfə-m ] qəke<sub>w</sub>pčəə  
 Mira boy.ERG this car.ABS WH-COM.broke person-OBL asked  
 'Mira asked with whom (lit.: what person) the boy broke this car.'

"Embedded declarative" and "embedded polar interrogative" MCs can have a nominal head too. It is represented by abstract nouns like 'news,' 'verity,' 'statement,' as shown in (26).

- (26) [[č'ale-r njəpe qə-zere-kwežjə-š'tə] (šəpqə)-r aš' qəsjə<sub>w</sub>əə  
 boy-ABS today DIR-zere-come-FUT verity-ABS 3SG.ERG said  
 'S/he said that the boy was coming back today.'

MCs like the one in (26) could hold a very different relation to this overt head than the head of a relative clause: the MC could be a complement of the abstract noun, just as it is the case with familiar *fact*-clauses across languages, which superficially resemble relative clauses (Kiparsky and Kiparsky 1970, a.o.). However, two observations suggest that this is not the right proposal and that MCs with nominal heads are actually relative clauses. First, in languages where complement clauses can appear

<sup>3</sup> The reasons why relative clauses do not stack are not entirely clear, but it is worth noting that the stacking of relative clauses, generally available for postnominal relatives (Hudson 1990; Sag 1997), is difficult or even impossible in head final languages (Suzuki 2005, Larson and Takahashi 2005).

with and without a head noun, the two constructions have different distribution and interpretation (e.g. *She remembered/\*thought the (fact/claim/rumor) that it was sunny*); in Adyghe, there is no interpretive difference between the variants of (26) with and without *šəpqər*. Second, complement clauses without the head noun are syntactically transparent, as shown by the English translation of (27) and (28). On the other hand, all Adyghe MCs, even “embedded declaratives”, are strong syntactic islands, as shown by the only available reading in (27) and the unacceptability of (28):<sup>4</sup>

- (27) njəpe aš' [[ č'ale-r qə-zere-ḱwežjə-š'tə] qəsjəʔ<sub>wa</sub>ḱ  
today 3SG.ERG boy-ABS DIR-zere-come-FUT said  
‘Today, s/he said that the boy was coming back.’ (said today/\*return today)
- (28) \*aš' [[ č'ale-r sədjəḱ<sub>wa</sub> qə-zere-ḱwežjə-š'tə] qəsjəʔ<sub>wa</sub>ḱ  
3SG.ERG boy-ABS when DIR-zere-come-FUT said  
(‘When did she say the boy was coming back?’)

One could counter this with the proposal that all MC, regardless of the overt head noun, resist extraction as complex DPs. However, we find that DPs and NPs in Adyghe are actually transparent; as (29) shows, constituents of a DP can scramble. Therefore, the DP status fails to account for the strong island effects in MCs.

- (29) a. we-ḱ-a sša-m jə-prezjədent-ər?  
2SG-know-INTERR USA-OBL POSS-president-ABS  
b. jə-prezjədent-ər<sub>i</sub> we-ḱ-a [ t<sub>i</sub> sša-m ] ?  
POSS-president-ABS 2SG-know-INTERR USA-OBL  
c. sša-m<sub>i</sub> we-ḱ-a [ t<sub>i</sub> jə-prezjədent-ər ] ?  
USA-OBL 2SG-know-INTERR POSS-president-ABS  
‘Do you know the president of the USA?’

To sum up, MCs that behave like relative clauses have wh-agreement on the verb. MCs that behave like embedded wh-interrogatives are identical to relative clauses, in particular they exhibit the same wh-marking. MCs that behave like embedded declaratives and polar interrogatives carry the invariable marker *ze-re*, which appears at the left periphery of the embedded verb. We suggest that *ze-* is the usual marker of wh-agreement (fused with the oblique marker), and *re-* is a high applicative whose function we discuss below. If this is on the right track, then the *zI/-* marking on predicates of all MCs is that of wh-agreement.

On the basis of their distributional properties, we concluded that MCs are all DPs. Next, based on the syntactic opacity (which is not found in complex DPs), uniform wh-agreement, and constraint against stacking, we conclude that these complex DPs all contain a relative clause with an operator-variable configuration.

**4.2. What relativizes in the *ze-re* clause?** In order for this proposal to go through, we need to consider what can relativize in *ze-re* clauses, the ones we encounter as embedded declaratives and embedded polar interrogatives. We just concluded that *ze-* in *ze-re-* is the usual wh-agreement that signals/licenses an operator-variable configuration. What is *-re-* though and what does it contribute?

Recall that the morphological order of applicatives mirrors the syntactic hierarchy, with the leftmost applicative corresponding to the highest position. Whatever variable is indexed by *ze-re-*, it is quite high, since it is the highest applicative. We suggest that *-re-* signals and licenses a specific kind of operator-variable configuration: a variable over polarity operators, as shown in (30).<sup>5</sup>

- (30) [DP [CP Op<sub>i</sub>-polarity [TP ... [ApplP *ec<sub>i</sub>* [Appl<sup>o</sup> *re*] [vP ... ]]]]]

<sup>4</sup> For reasons of space, we illustrate just with one example, but all the MCs are equally strong islands.

<sup>5</sup> Gerasimov and Lander 2008 propose that *ze-* indexes the (silent) noun ‘fact’ and *-re-* instantiates one of the functions of the instrumental operator. The abstract head noun ‘fact’, however, is incompatible with polar interrogatives (see Caponigro and Polinsky to appear for details); as for the nature of the high *-re-*, it can co-occur with the instrumental *-re-* (which is lower), and that casts doubt on their synchronic identity.



A polarity operator is a function that takes a proposition  $p$  and returns either the very same proposition  $p$  (positive polarity operator) or its negation  $\sim p$  (negative polarity operator). The whole mystery clause would end up denoting a set containing the two polarity operators, after standard lambda abstraction over the variable has applied (see Caponigro and Polinsky to appear for the details of the semantic analysis and independent evidence in favor of polarity operators and variables over them). The intuition that we want to capture by means of polar operators is that embedded declaratives and embedded polar interrogatives share a basic feature at the level of their semantic contribution: their denotations are built on the same proposition. For instance, the denotations of the embedded declarative (*that*) *Mary left* and of the embedded polar interrogative *if/whether Mary left* both depends on the proposition 'that Mary left'. This proposition is either the actual denotation of the clause, as in the case of the embedded declarative, or the proposition that together with its negation occurs as a member of the set-denotation, as in the case of the embedded polar interrogative.

A possible additional argument for the relative clause analysis of *ze-re-* clauses comes from the observation that these clauses never stack with other MCs. In more familiar languages, a fact-clause and a relative clause can stack:

- (31) a. The fact that gas consumption is diminishing that/which CNN ignored  
 b. % The fact that/which CNN ignored that gas consumption is diminishing

In Adyghe, no such stacking is possible in either order, which suggests that these clauses are all of the same nature (recall that relative clauses proper do not stack):

- (32) a. \* [  $da\kappa_{we}me$      $zere-\hat{s}_{we}j\hat{e}\kappa_{we}$      $m_{we}rat$      $q\hat{a}sfj\hat{e}^?_{we}ta-\kappa e$  ]     $qebarer$   
           marrying    zere-desire\_have.PRES    M    deliver.me-PAST news.ABS  
 b. \* [  $m_{we}rat$      $q\hat{a}sfj\hat{e}^?_{we}ta-\kappa e$      $da\kappa_{we}me$      $zere-\hat{s}_{we}j\hat{e}\kappa_{we}$  ]     $qebarer$   
           M    deliver.me-PAST    marrying    zere-desire\_have.PRES    news.ABS  
           ('the news/rumor that she wants to get married which Murat told me')

4.3. *zere- as a marker of subordination?* All five clauses considered here are syntactically the same: definite DPs that include a CP with an operator in it, binding an empty category in the TP. However, one could consider them all definite DPs, with the marker *zere-* simply indicating subordination or complementation. Such an analysis would capture the syntactic distribution and island effects and would also capitalize on the well-attested parallels between relative and non-relative complementizers (English *that*, Romance *que*, Russian *čto*, etc.). Furthermore, one could draw a parallel between *zere-* and the English *how* in a sentence like (33):

- (33) I remember how my Great Uncle Jerry would sit on the porch all day long.

However, such an analysis would create significant difficulties in accounting for the polar interrogative use of MCs. As far as we know, no languages that have homophony between relative and complement clause heads, also include polar interrogatives in that list. Adyghe MCs do not presuppose their content, while English *how*-complements do. Next, Adyghe MCs stand out in that the operator-variable relationship in them is marked morphologically (by wh-agreement and, if other conditions are met, an applicative marker).

## 5. Conclusions

We showed that all Adyghe mystery clauses have the same basic syntactic structure: they are all complex DPs containing relative clauses, thus instantiations of a syntactic configuration in which an operator binds an empty category. Given the empirical facts of Adyghe, we do not see any compelling reasons to posit structural ambiguity for the mystery clauses considered here. Our conclusions are similar to the ones reached by Gerasimov and Lander (2008) who analyze the embedded declarative MC as a relative clause (they do not consider other MC types however).

If our proposal is on the right track, Adyghe is simpler than the more familiar languages, where both relativization and complementation are required. Thus "sentential complements" are not an indispensable part of grammar; they can be fully represented by relative clauses within complex DPs.

What follows from this simplicity is that the more familiar complementation strategies, ones that we normally take for granted, may not constitute a structural necessity in natural language.

The Adyghe system offers further empirical support to the idea that relative and non-relative complementation are qualitatively different (Rizzi 1990; Lasnik and Saito 1992), although the conceptual motivation for this difference is not yet understood.

There is another challenge left. As we saw, mystery clauses receive five different interpretations, according to the verbal morphology and/or environment they occur in—so how can the same syntactic structure can be mapped into five different meanings? We address this puzzle in Caponigro and Polinsky (to appear) and show that this mapping can be achieved by means of semantic tools that are independently available.

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